

The method is used for grinding or polishing materialographic samples.

Moreover the method according to the invention is used  
5 for grinding or polishing silicon wafers.

The invention will now be described in further details with reference to a drawing, which illustrates some embodiments of the invention.

10

#### Brief Description of the Drawings

Fig. 1 shows top-view of set-up with single sample holder and radial sweeping.

15

Fig. 2 shows top-view of another embodiment with sample holder with 3 samples or 1 sample and 2 dummies.

Fig. 3 shows top-view of another embodiment with single  
20 sample holder and semi-circular sweeping.

Fig. 4 shows side-view of set-up.

Fig. 5 shows examples of top reference planes.

25

Fig. 6 shows the set-up using two displacement sensors.

Fig. 7 shows a sketch of the set-up for the feasibility test.

30

Fig. 8 shows screen prints from sensitivity test.

Fig. 9 shows a side view of another embodiment with single sample holder and a two-step measuring process.

Fig. 10 shows a bottom view of a sample holder with a reference mark.

Fig. 11 shows a side view of a setup with a separate measurement station, cleaning station and drying station.

#### Detailed Description of the Preferred Embodiment

In Fig. 1 a top-view of the set-up with a single sample holder is seen. The sample (5) is swept forward and backwards towards the centre (2) of the polishing or grinding pad (1). In Fig. 1A the sample is passing over the rim of the polishing or grinding pad and the height from the end face of the sample is polished and the reference plane is being measured. The measurement is preferably performed by a laser scanning micrometer, where a band of parallel laser beams (6) is sent from the emitter (3) to the receiver (4). The sample in the sample holder (5) obstructs some of the laser beams in Fig. 1A while in Fig. 1B the sample is completely over the polishing pad. No laser beams are obstructed in Fig. 1B and hence the measurement is in pause mode.

During the polishing or grinding the polishing pad (1) is rotated round its centre (2). The sample is preferably rotated round its vertical centre axis during the grinding or polishing action, however this rotation is not necessary for the material removal measurement to work.

30

Fig. 2 shows the top-view of another embodiment where 3 samples are simultaneously being treated. A moving device (8) with 3 samples is shown.